

STATE OF SOUTH CAROLINA )  
)  
COUNTY OF SPARTANBURG )

**AFFIDAVIT OF DR. BRIAN G. MORIN**

I, Brian G. Morin, after being first duly sworn on oath, depose and say that:

I am an inventor of the invention disclosed and claimed in the patent application entitled "Textile Fabric With Particle Attracting Finish", Serial No. 09/178,396, filed October 23, 1998.

My education background is a B.S. degree in Physics from the University of North Carolina at Chapel Hill in 1989. I received a M.S. degree in Physics at the Ohio State University in 1992 and completed a Ph.D. in Physics at the Ohio State University in 1994.

From 1994 to 1995, I was employed at Spectro Dynamic Systems, where I worked developing radar absorbing paint for stealth aircraft. In 1995, I joined Milliken Research Corporation where I have been conducting research and developing applications in the field of changing polymer morphology, including clean room wipers, high tenacity fibers, and fibers with unique electrical properties.

In response to the U.S.P.T.O. action dated April 24, 2000, I was asked to develop a comparative example based on the disclosure in Yahiaoui et al., U.S. Patent No. 5,814,567.

**Comparative Testing**

Yahiaoui et al. disclose coating textile webs with a hydrophilic polymeric material. Illustrative compositions are nonwoven, polypropylene substrates coated with a modified polysaccharide. Accordingly, the following materials were selected for testing.

### **Fabric Substrate**

Fabric A was a needlepunched, nonwoven, polypropylene fabric. The fabric had a weight of 4 ounces per square yard. The polypropylene fiber was approximately 8 denier per filament.

Fabric B was a spunbond, nonwoven, polypropylene fabric. The fabric had a weight of 2.3 ounces per square yard. The fabric had been calandered and was flat and stiff.

### **Hydrophilic Polymer Coating**

Hydroxyethylcellulose: Aqualon Natrosol 99-250 LR.

Methylcellulose: Dow Methocel A4M

Hydroxypropylmethylcellulose: Dow Methocel K15M

The fabrics were immersed in a 0.25 wt.% aqueous solution of the hydrophilic polymer, removed and squeezed to remove the excess liquid. The fabrics were dried in an oven at 60°C for one-half hour. The add on of hydrophilic polymer coating was approximately 0.25 wt.% and 0.1 wt.% based on the weight of the uncoated fabric, for Fabrics A and B, respectively.

### **Testing**

Each of the coated fabrics was tested for (a) particle count of particles greater than 0.5 microns, and (b) particle count of particles greater than 5 microns, according to Biaxial Shake Test IEST-RP-CP-CC004.2. The results are set forth below in Table 1.

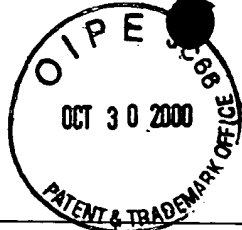


Table 1

| Fabric | Coating                       | Particles > 0.5 microns (per m <sup>2</sup> ) | Particles > 5 microns (per m <sup>2</sup> ) |
|--------|-------------------------------|-----------------------------------------------|---------------------------------------------|
| A      | Hydroxyethyl Cellulose        | 97 million                                    | 4.3 million                                 |
| A      | Methyl Cellulose              | 312 million                                   | 12.9 million                                |
| A      | Hydroxypropylmethyl Cellulose | 320 million                                   | 13.2 million                                |
| B      | Hydroxyethyl Cellulose        | 66 million                                    | 840,000                                     |
| B      | Methyl Cellulose              | 164 million                                   | 5.3 million                                 |
| B      | Hydroxypropylmethyl Cellulose | 239 million                                   | 10.5 million                                |

The lower particle counts measured for Fabric B, relative to Fabric A, are believed to be due to the lighter weight of Fabric B and contaminants being trapped in the fabric matrix of Fabric B. (The particle count is based on the square meter of fabric). Calandered spunbond fabrics, such as Fabric B, have not been used as cleanroom wipers, to the best of my knowledge, because of insufficient absorbency, poor drape, poor hand, and lack of substance.

I make this affidavit in support of prosecution of my invention entitled "Textile Fabric With Particle Attracting Finish."

Brian G. Morin

Sworn to and subscribed before me,  
this 29 day of October, 2000.

Notary Public

CHRISTI J. RODDY  
NOTARY PUBLIC  
COMMISSION EXPIRES  
JULY 29, 2006

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